L.—*Description of two new Genera of Irish Zoophytes**. By Arthur Hill Hassall, Esq., Corresponding Member of the Natural History Society of Dublin.

Order ZOOPHYTA ASCIDIOIDA.

Family Alcyonidulæ.

Genus Cycloum.

Character.—Polypidom fleshy, encrusting, covered with numerous imperforate papillæ: polypi ascidian; *ova in clusters*.

Cycloum papillosum.—Polypi with eighteen tentacula disposed in the form of a bell.

This species is almost invariably found investing the frond of *Fucus serratus*, over the surface of which it spreads in patches of from one to two inches in extent, more frequently of one, and seldom exceeding two inches. The crust is fleshy, and rather thick: it is covered with numerous papillæ very closely set together. The polypi do not issue from these papillæ, which are imperforate, but from larger eminences of irregular form and size, in the centre of which a puckered depression is seen. The polypi have eighteen tentacula, describing a cup or bell. The ova lie in clusters, each cluster containing six or seven ova arranged in a circle. The clusters are irregularly scattered through the polypidom, and each is inclosed in a space somewhat larger than is sufficient to contain it, the remainder of the space being occupied by a fluid in which numerous small particles are seen which are kept in constant action by the motion of the cilia on the ova. Each ovum is of a circular form, but is depressed, one side more so than the other: round its edge a fringe of cilia is apparent; these may be seen in motion long before the ova are ready for becoming disengaged. I have discovered in this, as well as in the succeeding and some other genera, a body of a very peculiar nature, but concerning the uses of which I can at present only hazard some conjectures. It is, in this species, and in *Alcyonidium gelatinosum* and *hirsutum*, in which I have also met with it, of an oblong form, and composed of a transparent matter, in which numerous small dark brown granules, circular in shape and not unlike ova, are imbedded. I at first imagined that they were nothing more than particles of lime lodged in a soft jelly-like substance, but this opinion was disproved by the application of hydrochloric acid, which did not cause effervescence. These bodies are far more numerous than the ova, and are not more than one-tenth their size. The most probable conjecture which I have been able to form as to their nature is, that they are organs destined to contain the ova until they have arrived at a certain degree of maturity, in fact, ovaries, and if not ovaries, the ova themselves in a very early stage of their formation.

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* Communicated to the Dublin Nat. Hist. Society, Feb. 1841.

I have been induced to raise this species to a generic rank, principally from the arrangement of the ova in circles, which is, I believe, peculiar to it. Some weeks ago, when at Belfast, Mr. Thompson pointed out this species to my notice, saying, at the same time, that he had forwarded it long since to Dr. Johnston as new; its distinctive characters had however been made out by myself long previous to this interview with Mr. Thompson, and reference is made to it in my Catalogue*.

This zoophyte, as well as the succeeding species, exhibits in a very remarkable degree that "close adhesion to life," the usual accompaniment of a low organization, which renders this class of animals so patient of injuries which would be fatal to beings of greater complexity of structure. I have on more than one occasion seen the polypidoms of this and the following species enveloped in a firm coating of ice; on immersion of either of these in sea-water the coating has become dissolved, and the polypi have protruded their feelers, and have appeared as active as though they had never been exposed to such a very low degree of temperature as would have destroyed the life of more highly organized animals. From this it is apparent that their sensibility cannot be very great.

Dublin bay, on *Fucus serratus*; not uncommon.

We now come to the description of the second genus.

Order ZOOPHYTA ASCIDIOIDA.

Family ALCYONIDULÆ.

Genus SARCOCHITUM.

Character.—Polypidom encrusting, fleshy, covered with numerous prominences of irregular form and unequal size, from which the polypi issue; ova circular, scattered singly throughout the polypidom; a dark brown body of a *circular* form filled with small round granules is apparent in great numbers through the polypidom.—Polypi ascidian.

Sarcochitum polyoum.—Polypi with twenty tentacula.

This species is also usually found investing *Fucus serratus*, the frond of which it sometimes covers to the extent of several inches. The crust is thin and fleshy, and covered with numerous large eminences of irregular form and unequal size, which exhibit a puckered appearance in the centre, and from which the polypi issue; these have twenty tentacula. The polypidom, when found on one side of the weed, is generally also present on the reverse side; and this is somewhat curious, as the crust almost constantly terminates on each side of the weed at some distance from its edge, so that it cannot reach the one side from the other by a continuity of growth.

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* Published in the 'Annals' for Nov. 1840, p. 170.

The ova in this species are exceedingly numerous, and vary in colour from white to yellow; they present much the same form and appearance as those of the preceding genus. If a quantity of the sea-weed, with the zoophyte upon it, be placed in salt-water for a few hours, great numbers of the ova will become liberated, and may plainly be seen with the unassisted eye moving about in almost ceaseless action; now gliding rapidly along the surface of the water, now wheeling round upon their axes; at one time elevating themselves in the fluid, again as rapidly sinking in it:—these elevations and subsidences seeming to depend upon the form of the ovum, which is seen to change with these movements. The facility and rapidity with which these little bodies seem to perform their evolutions is very striking. They may often be seen to run along the water in a straight line for several inches, at a pace which would far outstrip the fleetest Newmarket racer—the relative sizes of the two creatures being taken into consideration;—and it is not a little curious to observe, that no matter how many ova be moving about in the same space, still they never come in contact, appearing to avoid each other as carefully as though they were possessed of eyes.

The thought then occurred to me, that the minute, frail, and delicate ova of these species must have made their way unscathed and uninjured through from twenty to thirty miles of the troubled and stormy ocean, and have fixed themselves to our rocks—the vibratile cilia on their surfaces being mainly instrumental in effecting their transportation.

The polypidoms of this and the preceding species are often so mixed up in their distribution upon the same piece of sea-weed, that it requires a practised eye to distinguish them. I have been induced to consider this species as distinct from the genus *Alcyonidium,* to which it bears a near relation—for the following reasons: 1st. The number of the tentacula, a character which I have found to be constant, it being twenty in this and but sixteen in *Alcyonidium*; 2nd. This species never rises from the surface of attachment in the form of an independent polypidom; it is invariably encrusting, whereas all the species of the genus *Alcyonidium* do form elevated polypidoms; and 3rd. There is a difference in the form of the body or organ to which I have referred in the description of the genus *Cycloum*;—it being circular in this, while it is oblong in the genus *Alcyonidium*.

I have frequently noticed a species of zoophyte lining the interior of old shells of *Buccinum undatum*, and covering the under surface of stones, which I consider to be identical with this. If a portion of the polypidom of this species, in a living condition, be suddenly plunged into spirits, an instantaneous protrusion of the polypi takes place, having their feelers arranged, as in life, in the form of a graceful bell. In this state they may be kept, for a time, for the purposes of future examination. The cause of this protrusion is readily explained. The polypes being already contracted within their cells,—on the application of the irritating spirit are compelled to start outwards;—the only motion of which they are capable when folded up within these cells*.

I have, in conclusion, to acknowledge the assistance I received from the classical attainments of my talented and valued friend, G. J. Allman, Esq. of Bandon, in the naming of the genera.

LI.—*Notes on Birds.* By T. C. Eyton, Esq., F.L.S.

No. III.

Merops Melanura, Vig. and Horsf.

Tongue long, pointed, but soft at the extremity and without bristles, posteriorly armed with two strong spines on each side, between which there are a few smaller ones.

Œsophagus small, of nearly uniform diameter; proventriculus large, nearly globular, and slightly contracted at its entrance into the stomach, which is somewhat oval and slightly muscular, with the epithelium hardened.

The intestinal canal was much damaged, but appeared to be of rather large diameter. I could not perceive any cæca: liver large, bilobed, right lobe nearly twice the size of the left.

Sternum rather elongated, with a deep keel considerably produced anteriorly, and much rounded on its inferior edge. The posterior margin of the sternum indented on each side with two very deep fissures, the lateral ones deepest, broader posteriorly than anteriorly; the manubrial process not distinct and prominent, but merged into the keel, which is continued forwards between the coracoids.

Os furcatum with the rami much flattened laterally, strong and slightly arched, without any process at the point where it approaches the sternum; coracoids of moderate length and strength, with a very broad articulation to the sternum.

Pelvis very broad; obturator foramen linear, nearly obliterated;

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* Drawings of these two genera have been forwarded by myself to Dr. Johnston, and will, I suppose, appear in his Supplement.